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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/053,222	10/23/2001	Osvaldo M. Colavin	99-RB-183	3541
30428	7590	11/04/2004	EXAMINER	
STMICROELECTRONICS, INC.			ELDER, JEREMY RYAN	
MAIL STATION 2346			ART UNIT	
1310 ELECTRONICS DRIVE			PAPER NUMBER	
CARROLLTON, TX 75006			2612	

DATE MAILED: 11/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/053,222

Applicant(s)

COLAVIN ET AL.

Examiner

Jeremy R. Elder

Art Unit

2612

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 April 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to because:

In figure 10, step 1014, "sore" is understood to be "store".

In figure 13, the "resize buffer" step is labeled with reference number 1312, where the specification labels it as 1321 (pg 19, line 16). Also "transform and stitch" step is labeled as 120, but the specification has it labeled as 1320 (pg 19, line 21). Also the drawing has reference number 122 labeling a "panorama buffer", but the specification has number 122 labeling a "frame buffer".

In figure 14, the specification labels "Capture DMA" as 1414, but the drawing mistakenly has it labeled as 1416, which is the same label as "Embedded CPU".

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several

Art Unit: 2612

views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities:

Applications described in the specification as "[Pending]" need to be updated.

Appropriate correction is required.

Claim Objections

3. Claim 4 is objected to because of the following informalities:

Claim 4 depends on itself and is understood to be dependent upon claim 1 for examining purposes.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claim 1, 4, 8, 9, 11, 14, 17 and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Chen (US #6,522,744).
6. Regarding claim 1, Chen discloses a method for storing a plurality of still images to form a panoramic image. Chen discloses receiving the first image of a series of images to form a panoramic image (col 7, lines 16-18). Chen also discloses storing the first image in memory (col. 3, lines 20-27). Chen discloses receiving one or more subsequent images (col. 7, lines 16-17) and calculating one or more panoramic parameters between a current image and a previous image stored in memory (col. 7, lines 23-26). Chen discloses the generation of a data structure with information (panoramic parameters) about each image (col. 7, lines 23-28). It is inherent that the data structure containing the panoramic parameters be stored in memory.

7. Regarding claim 4, Chen discloses storing the current image with one or more panoramic parameters includes storing the current image in non-volatile memory (col. 7, lines 23-27).
8. Regarding claim 8, Chen discloses storing the current image with one or more panoramic parameters includes storing the displacement (positional proximity) (col. 7, lines 16-27).
9. Regarding claim 9, Chen discloses playing back the plurality of still images stored to form a panoramic image (col. 6, lines 44-49). Chen discloses retrieving one or more images from memory after they have been stored (col. 6, lines 39-44). Chen further discloses stitching the one or more images together using a program code (col. 6, lines 40-41) to form a panoramic image using panoramic parameters (position information) previously stored in memory (col. 6, lines 42-44).
10. Regarding claim 11, Chen discloses a computer readable storage medium (memory 34) containing programming instructions (col. 3, lines 12-17). Regarding the limitations, see claim 1.

Art Unit: 2612

11. Regarding claim 14, Chen discloses a picture-stitching device for storing a plurality of still images to form a panoramic image (fig. 9 and col. 9, lines 31-55).

Regarding the limitations, see claim 1.

12. Regarding claim 17, see claim 4.

13. Regarding claim 21, see claim 8.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 2, 12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (US #6,552,744) as applied to claim 1 above, and further in view of Anderson (US #5,903,309).

Regarding claim 2, while Chen discloses storing the current image with the one or more panoramic parameters, he does not disclose storing the panoramic parameters in a field of a compressed image format reserved for comments or extensions.

Art Unit: 2612

Anderson discloses an information field comprising of tags that can indicate whether the image is a single image or a panoramic image (col. 6, lines 37-41).

It would have been obvious to one of ordinary skill in the art at the time of invention to use the information fields of Anderson to save the panoramic parameters for the benefit of creating a shortcut for the camera to piece together a panoramic image by preventing the need for the camera to reconfigure the image overlap as well as save space by not having to save a stitched panoramic image in addition to the original images.

16. Regarding claim 12, see claim 2.

17. Regarding claim 15, see claim 2.

18. Claims 3, 13 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (US #6,552,744) and Anderson (US #5,903,309) as applied to claim 2 above, and further in view of Anderson et al. (US #6,493,028).

Regarding claim 3, while Chen and Anderson disclose storing images with one or more panoramic parameters, neither disclose giving the user the ability to choose the compression type of the stored image.

However, Anderson et al. teach that the user chooses the file format from available file formats (col. 9, lines 43-50). Since claim 3 is written in Markush format,

Art Unit: 2612

examiner only needs to select one of the list to reject. Anderson discloses the use of JPEG formats (col. 6, lines 26-27).

It would have been obvious to one of ordinary skill in the art at the time of invention to provide the user with a choice of a plurality of image formats for the benefit of allowing the user to choose the degree of compression. Since compression types are different, some save more space while at the same time degrading the image. This allows the user to choose a less lossy compression for more important images and a lossier compression to save space.

19. Regarding claim 13, see claim 3.

20. Regarding claim 16, see claim 3.

21. Claims 5, 6, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (US #6,552,744) and Anderson (US #5,903,309) as applied to claim 2 above, and further in view of Suzuki (US #5,724,579).

22. Regarding claim 5, neither Chen nor Anderson disclose storing panoramic parameters in a comment field of an image format. While Anderson discloses storing the panoramic parameters in the compressed image format, Anderson does not specifically label the parameters being stored in a comment field.

However, Suzuki discloses an application marker (or comment marker) being produced and storing information about a second (or subordinate) image (fig. 18 and col. 15, lines 37-43).

It would have been obvious to one of ordinary skill in the art at the time of invention to use the subordinate image data of Suzuki to store the overlap information of Chen for the benefit of storing panoramic information of an image so as to prevent the need to combine the images and save as a separate, large panoramic image file.

23. Regarding claim 6, neither Chen nor Anderson disclose storing panoramic parameters in a marker segment of a JPEG image format.

However, Suzuki discloses an application marker (or comment marker) being produced and storing information about a second (or subordinate) image (fig. 18 and col. 15, lines 37-43).

It would have been obvious to one of ordinary skill in the art at the time of invention to use the subordinate image data of Suzuki to store the overlap information of Chen for the benefit of storing panoramic information of an image so as to prevent the need to combine the images and save as a separate, large panoramic image file.

24. Regarding claim 18, see claim 5.

25. Regarding claim 19, see claim 6.

26. Claims 7 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (US #6,552,744) as applied to claim 1 above, and further in view of May et al. (US #6,714,249).

Regarding claim 7, Chen does not disclose the storing of sequence numbers for the captured images.

However, May et al. disclose the titles of the images carrying digits that indicate their capture order (N001P01.jpg, N001P02.jpg, N001P03.jpg) giving them an index value (last 2 digits in the example filenames) representing a sequence number of the current image in the series of images.

It would have been obvious to one of ordinary skill in the art at the time of invention to use the index numbers of May et al. to provide a combining order for Chen for the benefit of providing the user sufficient information during the process of playing back the panoramic.

27. Regarding claim 20, see claim 7.

Art Unit: 2612

28. Claims 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (US #6,552,744) as applied to claim 9 above, and further in view of Mizoguchi et al. (us #5,959,669).

Chen does not disclose details on decoding the images or down sampling the images to fit the resolution of the camera display.

Mizoguchi et al. disclose a method for displaying images on a standard resolution digital camera with high-resolution photographing modes.

Mizoguchi et al. disclose that the microprocessor converts image data into a form corresponding to the visual display (i.e. JPEG decoding) (col. 31, lines 50-59).

Mizoguchi et al. do not disclose details on down sampling the image. Official notice is taken that LCD panels do not have very high resolutions, therefore down-sampling a higher resolution digital image in order to fit the image to the LCD display on the camera is required.


It would have been obvious to one of ordinary skill in the art at the time of invention to use the processing of Mizoguchi et al. in the system of Chen for the benefit of being able to recall images stored in a compressed format and properly display those images on the camera's LCD.

Conclusion

29. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy R. Elder whose telephone number is (703) 305-4693. The examiner can normally be reached on M-F 800-430.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy R. Garber can be reached on (703) 305-4929. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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